

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): An electronic device for image processing ~~[[(1)]]~~ generating an output image from an input image, the two images being composed of pixels, the input image originating from a first video sensor ~~[[(2)]]~~ and representative of a scene ~~containing~~ having at least one discrete light source, said input image ~~containing~~ having a first representation of said discrete light source, the output image ~~comprising~~ having a second representation of said discrete light source, ~~characterized in that said~~ said electronic device comprises comprising at least:

[[•]] [[an]] first electronic unit ~~[[(5)]]~~ for improving contrast making it possible to provide on the basis of the input image an image with better contrast;

[[•]] [[an]] second electronic unit ~~[[(6)]]~~ for selection making it possible to provide on the basis of the image with better contrast a filtered image now ~~containing~~ having only at least a first set of pixels whose electronic level is situated above a first threshold, said first set corresponding to the representation of at least one potential light source;

[[•]] [[an]] electronic likelihood estimation unit ~~[[(7)]]~~, making it possible to provide on the basis of the first set of pixels of the filtered image an estimated image ~~comprising~~ having a second set of pixels, said second set corresponding to the representation of estimated light sources, the distributions of the pixels of the representation of the estimated sources corresponding to bidimensional mathematical functions; with each representation of estimated light source there being associated a likelihood probability;

[[•]] [[an]] third electronic unit ~~[[(8)]]~~ for validation providing on the basis of the estimated image the final image, said image containing a representation of the estimated light source if the associated likelihood probability is greater than a second threshold.

2. (currently amended): The electronic device for image processing ~~[[(1)]]~~ as claimed in claim 1, ~~characterized in that~~ wherein the level of the first threshold depends at least on said validation unit ~~[[(8)]]~~.

3. (currently amended): The electronic device for image processing as claimed in claim ~~[[s]] 1 or 2~~, ~~characterized in that~~ wherein said electronic function for improving the contrast of the initial input image comprises at least one matrix filter of CBF (contrast box filter) type applied to each pixel level of the initial input image to obtain the contrasted input image.

4. (currently amended): The electronic device for image processing as claimed in claim 3, ~~characterized in that~~ wherein said matrix is a square matrix of M rows and M columns of elements, the N central elements having one and the same first value, the other $(N - M^2)$ elements of the matrix having one and the same second value equal to said first value multiplied by $N/(M^2 - N)$.

5. (currently amended): The electronic device for image processing as claimed in ~~one of~~ the preceding claim ~~[[s]] 1~~, ~~characterized in that~~ wherein the electronic likelihood estimator ~~[[(7)]]~~ ~~comprises~~ has at least one electronic function ~~[[(71)]]~~ for recognition of the shape of the representation of the light source making it possible:

~~[[•]]~~ to compare the levels of the pixels of the first set of the filtered image with calculated levels, emanating from predetermined mathematical functions

~~[[•]]~~ to provide a probability of presence of the representation of the estimated light source in the input image.

6. (currently amended): The electronic device for image processing as claimed in claim 5, ~~characterized in that~~ wherein the predetermined mathematical functions are bidimensional Gaussians.

7. (currently amended): The electronic device for image processing as claimed in claim 6, ~~characterized in that~~ wherein the recognition function is effected by applications of the method

of least squares between the levels of the pixels of the first set and the calculated levels.

8. (currently amended): The electronic device for image processing as claimed in ~~one of~~ the preceding claim[[s]] 1, ~~characterized in that~~ wherein, the filtered image comprising at least two representations of potential light sources, the electronic likelihood estimator comprises at least one electronic function [[(72)]] the recognition of for geometrical disposition of said representations, said function providing a probability of alignment of said representations of the light sources in the input image.

9. (currently amended): The electronic device for image processing as claimed in claim 8, ~~characterized in that~~ wherein when the representations of the potential sources are aligned along at least one straight line, the electronic recognition function comprises at least one function making it possible to effect a radon transform on the pixels of the filtered image.

10. (currently amended): The electronic device for image processing as claimed in ~~one of~~ the preceding claim[[s]] 1, ~~characterized in that~~ wherein, the representations of the sources being mobile in the input image, the electronic likelihood estimator comprises at least one electronic function [[(9)]] for modeling displacement of the representations of the estimated sources.

11. (currently amended): The electronic device for image processing as claimed in claim 10, ~~characterized in that~~ wherein the [[an]] electronic likelihood estimator [[(7)]] comprises at least one electronic function [[(73)]] for estimating displacement making it possible, on the basis of the electronic function for modeling displacement of the representations of the estimated sources:

[[•]] for each representation of estimated light source of a first estimated image occupying a first position, to calculate the theoretical displacement of said first position;

[[•]] to calculate a second position occupied by said representation of the estimated light source in a second input image;

[[•]] to compare said second position with the real position of said representation of the light source in said second input image.

[[•]] to provide a probability of displacement of the representation of the source in the input image.

12. (currently amended): The electronic device for image processing as claimed in ~~one of~~ claim[[s]] 4 ~~to 11, characterized in that~~ wherein, the probability of the likelihood of the representation of an estimated light source provided by the electronic unit [[(8)]] for validation is equal to the product of the probabilities of presence, of alignment and of displacement of said representation of the light source that are provided by the electronic estimation unit.

13. (currently amended): The electronic device for image processing as claimed in ~~one of~~ the ~~preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein the third electronic unit [[(8)]] for validation calculates a rate of rejection of the input image equal to the percentage of representations of estimated sources whose likelihood probability is situated above the second threshold over the total number of representations of estimated sources.

14. (currently amended): The electronic device for image processing as claimed in ~~one of~~ the ~~preceding~~ claim[[s]] 1, ~~characterized in that~~ wherein the device comprises an electronic histogram unit [[(10)]] making it possible to construct the histogram of the pixels of the image with better contrast, said histogram providing the number of pixels corresponding to a given energy level.

15. (currently amended): The electronic device for image processing as claimed in claim 14, ~~characterized in that~~ wherein the electronic histogram unit [[(10)]] comprises a function making it possible to determine a third threshold, the level of said third threshold being situated above the mean level of the pixels of the filtered image and below the mean level of the pixels of the representations of the potential light sources.

16. (currently amended): The electronic device for image processing as claimed in claim 15, ~~characterized in that~~ wherein, the histogram being represented in the form of a graph having as abscissa the level of the pixels and as ordinate the number of pixels corresponding to this

level, the level of the third threshold corresponds to the level which lies at the largest distance from the straight line passing through the maxima in abscissa and in ordinate of the histogram.

17. (currently amended): The electronic device for image processing as claimed in ~~one of the preceding claim~~[[s]] 1, ~~characterized in that~~ wherein the device comprises an electronic unit [[(11)]] called a recursive filter which determines for a second input image subsequent to a first input image, the value of the first threshold to be applied to this second image, the value of said first threshold depending at least on the value of the first threshold, of the third threshold and of the rate of rejection of the first input image.

18. (currently amended): The device for image processing as claimed in ~~one of the preceding claim~~[[s]] 1, ~~characterized in that~~ wherein the final image is projected in a viewing system [[(3)]] superimposed with an image originating from a second sensor.

19. (currently amended): The electronic device for image processing as claimed in claim 18, ~~characterized in that~~ wherein the first sensor [[(2)]] is sensitive in the near infrared in the 1 to 2 microns band and the second sensor is sensitive in the middle infrared in the 5 to 20 microns bands.

20. (currently amended): A viewing system comprising :
~~at least one video sensor~~ [[(2)],
an electronic device [[(1)]] for image processing , and
a viewing device [[(3)]], ~~characterized in that said system possesses~~
means for locating the position and orientating the video sensor in space, said image processing being according to ~~one of the preceding claim~~[[s]] 1, said locating means being interfaced with said device [[(1)]], it being possible to render said system mobile.

21. (currently amended): An aircraft ~~characterized in that it comprises~~ comprising a viewing system as claimed in claim 20, the viewing device being a so-called head-up viewfinder, the light sources being runway lamps.